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Anna Kron

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EXAMINER

ZEMEL, IRINA SOPJIA

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

1 RECORD OF ORAL HEARING  
2  
3 UNITED STATES PATENT AND TRADEMARK OFFICE  
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6 BEFORE THE BOARD OF PATENT APPEALS  
7 AND INTERFERENCES  
8  
9

10 *Ex parte* ANNA KRON, OVE NORDIN,  
11 STURE JAN NILSSON, and CHRISTINA BERGLUND  
12  
13

14 Appeal 2010-001826  
15 Application 10/758,540  
16 Technology Center 1700  
17  
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19 Oral Hearing Held: October 13, 2010  
20  
21

22 Before CHARLES F. WARREN, MARK NAGUMO and  
23 KAREN M. HASTINGS, *Administrative Patent Judges*.  
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25  
26 APPEARANCES:  
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28 ON BEHALF OF THE APPELLANT:  
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1 The above-entitled matter came on for hearing on Wednesday, October 13,  
2 2010, commencing at 2:02 p.m., at the U.S. Patent and Trademark Office,  
3 600 Dulany Street, Alexandria, Virginia, before Victoria L. Wilson, Notary  
4 Public.

5 THE USHER: Calendar number 27. Appeal number 2010-001826.  
6 Mr. de Weerd.

7 JUDGE WARREN: Good afternoon, Mr. de Weerd.

8 MR. DE WEERD: Hello.

9 JUDGE WARREN: How are you?

10 MR. DE WEERD: Very good.

11 JUDGE WARREN: Our court reporter today is Ms. Wilson. If you'd kindly  
12 present her with a business card either before the proceeding or after the  
13 proceeding, we would appreciate it.

14 MR. DE WEERD: Sure.

15 JUDGE WARREN: As you know, sir, you have 20 minutes. You may begin  
16 when ready.

17 MR. DE WEERD: Thank you.

18 Good afternoon. May it please the Board, I'm Willem de Weerd from Kenyon  
19 & Kenyon, LLP, and I represent Anna Kron in this Appeal.

20 This Appeal is for an invention which relates to expandable microspheres. In  
21 particular, the invention deals with the problem of providing an efficient  
22 method of eliminating or reducing residual monomers without unacceptable  
23 discoloration of the microspheres or significantly adversely affecting their  
24 capability of expansion.

25 This problem may be solved in the current invention by contacting the said  
26 thermoplastic expandable microspheres with an agent selected from a group

1 consisting of oxoacids of sulfur, salts and derivatives thereof comprising at  
2 least one sulfur atom having at least one free electron pair and binding three  
3 oxygen atoms.

4 The office action has found a rejection, a 103 one rejection over two  
5 references, finding invention obvious over Nakayama in view of Miller.

6 Nakayama teaches also a method of producing microspheres, and particularly  
7 also reducing acrylonitrile from expandable microspheres by using various  
8 cyanoethylation agents. These includes amines, alkanolamines, but also  
9 sulfite. And, in particular, Nakayama teaches that the amines and  
10 alkanolamines are the most preferably ones.

11 Miller, secondary reference, teaches the use of alkali metal sulfite to reduce  
12 unreacted acrylonitrile from polymer solutions. I would like to point out here  
13 that the polymer solutions are very different than the expandable microspheres,  
14 as has also been discussed in the Appeal Brief.

15 JUDGE NAGUMO: Doesn't Miller say that residual acrylonitrile dissolved in  
16 acrylonitrile polymers and/or water in which the acrylonitrile polymers are  
17 polymerized?

18 MR. DE WEERD: Uh-huh.

19 JUDGE NAGUMO: So what is the difference? You have small particles of  
20 polyacrylonitrile in Miller. There is a teaching that you can use these sulfites,  
21 which are required by the claim, to reduce the residual monomers --

22 MR. DE WEERD: Uh-huh.

23 JUDGE NAGUMO: -- within those particles. And you have got a teaching in  
24 Nakayama that you have expandable -- thermal expandable microspheres of  
25 polyacrylonitrile. Why isn't it just the substitution of one monomer scav --  
26 residual monomer scavenger for another?

1 MR. DE WEERD: Well, that's what I was trying to get at and -- in the second,  
2 and specifically because the polymers that are in Miller are not expandable  
3 microspheres, and one of --

4 JUDGE NAGUMO: What difference does that make?

5 MR. DE WEERD: Well, the difference -- what -- the difference it makes --

6 JUDGE NAGUMO: What is the difference between the polymer shelf in  
7 Nakayama and the polymers -- solid polymer particles in Miller?

8 MR. DE WEERD: The difference -- the difference lies into the result of the  
9 product that you have to obtain, whereas the polymers in Miller are not part of  
10 an expandable microsphere.

11 JUDGE NAGUMO: Where is the evidence that a person of ordinary skill in  
12 the art would have thought that the polymers in the microspheres, in the shelf,  
13 would be so different from other polyacrylonitrile particles that you would not  
14 have a reasonable expectation of successfully using the sulfites that Miller  
15 teaches in Nakayama?

16 MR. DE WEERD: I'm not sure if I follow your question correctly but I think  
17 the issue here is whether after having treated the polymers, whether they are in  
18 the polymer particles or solution in Miller, are the expandable microspheres.  
19 The expandable microspheres are expandable, therefore, the polymers need to  
20 have that residual amount of capability to expand.

21 JUDGE NAGUMO: And what evidence is there that that would not be the  
22 case? A person of ordinary skill in the art looks at these two references, you  
23 see something quite similar to what's being claimed, getting rid of residual  
24 monomers --

25 MR. DE WEERD: Uh-huh.

1 JUDGE NAGUMO: -- and they see another reference that says same kind of  
2 residual monomers in what appears to be the same kind of polymer, it's in a  
3 slightly different situation, geometry is different, but what evidence would you  
4 point us to, what finding of fact would you have us make on these records that  
5 a person would say, well, because of this teaching, these polymers in  
6 Nakayama would not be the same enough that we would expect it not to work?

7 MR. DE WEERD: Well, in table one of the current application, there is  
8 clearly a reference and there is different types of cyanoethylation agents or  
9 scavengers being used, where it is clear that some of them do not expand,  
10 while others do show sufficient expansion of the resulting -- excuse me -- the  
11 resulting expandable microspheres.

12 So they are not necessarily equivalent even though both of them are -- or both  
13 -- or all of these are cyanoethylation agents and scavengers.

14 JUDGE NAGUMO: I may not have understood you correctly. Are you  
15 saying that not all of the sulfites work?

16 MR. DE WEERD: No, what I'm saying is that not all of the sulfur-containing  
17 or other cyanoethylation agents that are in table one of the current  
18 specification, the application, this is --

19 JUDGE NAGUMO: Well, but Nakayama tells you to -- a way to treat  
20 thermoexpandable microspheres, and presumably after you have treated them,  
21 according to Nakayama, they are still useful for -- as thermo expandable  
22 microspheres. So you would select other materials with the aim of obtaining  
23 that result. In other words, they are still thermoexpandable afterwards.

24 MR. DE WEERD: Right.

25 JUDGE NAGUMO: And I don't see why you would not have such an

1 expectation based on Miller. And that -- and that seems to be the crux of -- of  
2 your argument. And I'm just trying to tease out what fact findings I need to  
3 make in order to say you are right, the Examiner is wrong.

4 MR. DE WEERD: Right. I understand where you are -- where your  
5 questioning is at and I'm saying, like, in Nakayama itself teaches that there is  
6 very different -- I mean there is various different types of cyanoethylation  
7 agents, including the monoamines, the alkanolamines, as well as sulfite.  
8 Looking at that reference, a person of ordinary skill in the art wanting to  
9 improve the process in Nakayama by providing better -- better ways of  
10 reducing the amount of acrylo -- acrylonitrile -- residual acrylonitrile in the  
11 expandable microspheres would probably more likely look at the monoamines,  
12 the amines and the alkanolamines and not at the sulfite type agents,  
13 specifically also because discoloration is a -- is a -- something that is important  
14 for these types of microspheres.

15 JUDGE NAGUMO: But the rejection isn't over -- I would agree with you if  
16 there is only Nakayama. I mean why go to sulfites?

17 MR. DE WEERD: Uh-huh.

18 JUDGE NAGUMO: But Miller says use sulfites for the same sort of thing,  
19 reducing residual acrylonitrile monomers. So it seems to me, well, there you  
20 are, and now why wouldn't you expect that to work. That would be one reason  
21 to say it's prima facie obvious after all. But I don't understand what fact I  
22 would find that would say, well, no, you would never look at Miller or, no,  
23 once you looked at Miller, you would realize that you couldn't do it. That's the  
24 part I don't see.

25 MR. DE WEERD: Well, I think part of it is in the evidence of the fact that

1 the inventors have tried various type of sulfite containing cyanoethylation  
2 agents, whereas the majority of them -- maybe I shouldn't say the majority,  
3 but a good amount of them will severely affect the expansion properties of  
4 the expandable microspheres. So it's not necessarily obvious to use sulfur-  
5 containing cyanoethylation agents to obtain both -- a product that's both not  
6 discolored, as well as retaining a capability of expansion for the expandable  
7 microspheres.

8 JUDGE NAGUMO: See, I worry about that sort of argument because we also  
9 hear the argument that, well, this reference works so well that why would you  
10 ever seek to improve it. And you seem to be saying, well, this reference only  
11 works so-so, so why would you go to Miller to -- I'm not seeing --

12 MR. DE WEERD: No, I'm saying under this table one, it's not in Nakayama.

13 JUDGE NAGUMO: No, I understand that, but if somebody is trying -- testing  
14 the prior art disclosures to see how well they work, they try various agents  
15 disclosed by Nakayama and they see that, well, there are problems with many  
16 of them, so they start to look for something else, but this is the ordinary sort of  
17 process of improvement and it's not as though sulfite -- these sulfites were  
18 unknown for the purpose of scavenging residual acrylonitrile. I don't think  
19 Applicants are trying to say that they discovered that.

20 MR. DE WEERD: No. No.

21 JUDGE NAGUMO: It's in this particular application. But -- I think I have  
22 explained why I'm having trouble understanding your argument.

23 MR. DE WEERD: Well, I think -- I mean the argument is that the requirement  
24 for these type of microspheres is both a -- preventing discoloration, as well as  
25 retaining the expansion capabilities, and sulfur containing -- containing agents  
26 are notoriously discoloring these type of polymer -- actually, expandable



1 microspheres, so a person of ordinary skill in the art would not necessarily  
2 look to Miller to make the modification if even -- if motivated by Nakayama to  
3 change the type of agents that they use.

4 JUDGE NAGUMO: Are you arguing against prima facie obviousness or are  
5 you offering this as evidence of unexpected results?

6 MR. DE WEERD: I know we have said prima facie obviousness but it's  
7 actually unexpected results.

8 Actually, I think, Judge Nagumo, I mean we have talked about all the things  
9 that I wanted to talk about. I don't have -- I don't have anything else to add.

10 At the conclusion, I would request the Board would consider the rejection and  
11 hopefully in our favor.

12 JUDGE WARREN: Okay. Any further questions?

13 JUDGE NAGUMO: No further questions.

14 JUDGE WARREN: Further questions, Judge Hastings?

15 JUDGE HASTINGS: No.

16 JUDGE WARREN: Thank you very much, counselor.

17 MR. DE WEERD: Thank you.

18 JUDGE WARREN: This proceeding is terminated.

19 Whereupon, the proceedings at 2:18 p.m. were concluded.